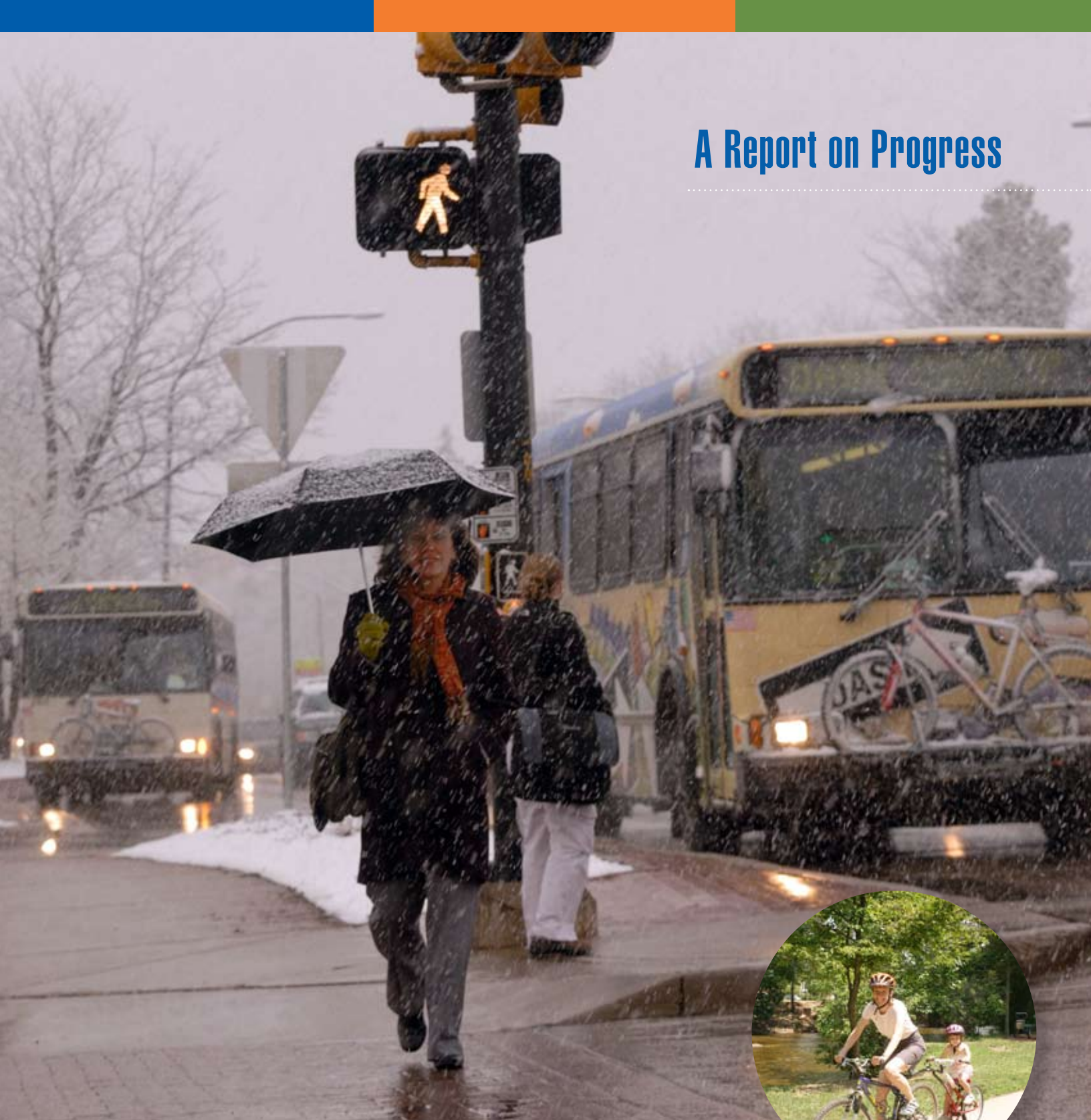


## A Report on Progress



November, 2010

# Transportation to Sustain a Community

Prepared by the City of Boulder  
Transportation Division



# Table of Contents

**PAGE 2** Letter from the Director

**PAGE 3** The Transportation Master Plan

**PAGE 6** How is Boulder Doing?

**PAGE 10** Evolution of the Transit System

**PAGE 13** Human Powered Action

**PAGE 20** Completing the Streets

**PAGE 22** Programs for Change

**PAGE 24** Partnering on the Bigger Picture

**PAGE 26** Transportation Finance

**PAGE 29** A Look into a Crystal Ball

## Highlights of Boulder's Transportation History

**1858** First gold seekers arrive in Boulder Valley



**1865** A locally financed road is started up Boulder Canyon, to Black Hawk and Ward including two toll gates

**1859** Boulder Town City Company established to develop lots and stake out roads

**1869** Silver discovered in Caribou. Boulder Canyon road continued to Nederland through the canyon with 33 bridges



Today, people in Boulder ride the bus at twice the national average, walk three times as much and bicycle at twenty times the national average.

FACT

**1871** Boulder's first Street Commissioner is appointed and given the authority to demand two days labor from each able bodied man

**1871** Wooden sidewalks built on Pearl by individual businesses "Woeful state of mantraps"

## Letter from the Director

Just over twenty years ago, Boulder charted a new direction for transportation in the community with the adoption of the Transportation Master Plan. Since then, Boulder has become one of the country's leaders in providing a balanced multimodal system. We are pleased to offer a snapshot of where we are today and the journey that led us here.

In the mid 1980s, community leaders recognized that the city's overall transportation approach was out of sync with other city goals. The community had made innovative investments in purchasing open space lands, managing growth and developing the Pearl Street Mall. In contrast, the approach to transportation was traditional, primarily focused on widening roads and building interchanges.

A citizen committee was charged with creating a new vision, which was codified in the 1989 Transportation Master Plan. Gone was the concept of 'building our way out of congestion.' Instead, the plan established bold goals to shift trips from cars to other modes by planning, funding and implementing a balanced set of travel choices. Community members helped develop innovative approaches and new products, including the Eco Pass and CU student bus pass programs, HOP and SKIP transit services and robust bicycle and pedestrian programs and connections.

Over the years, Boulder's approach evolved from treating each mode separately to the concept of all modes working in concert on all major corridors. Investments have been prioritized accordingly, and Boulder has emerged as a national leader in providing complete streets. We have learned much about the intertwining of land use and transportation, and have put this knowledge to use in developing focused plans for specific areas of the community.

Transportation crosses many boundaries, so support from regional and community partners has been essential to our progress. Closer to home, the vision for transportation has reflected consistent policy guidance from the Boulder City Council and the Transportation Advisory Board and overall support from the community.

Today, people in Boulder ride the bus at twice the national average, walk three times as much and bicycle at twenty times the national average. Today, Boulder has 76 underpasses linking over 150 centerline miles of bicycle connections, seven high frequency transit routes, a regionally shared vision for US 36, and more.

Today, we look to a future of challenges, opportunities and continued progress. Our biggest challenge is money, as we find it ever more difficult to maintain our existing system, much less expand it. Given the financial challenges, our biggest opportunity lies in repurposing our existing infrastructure to better serve all modes. We remain steadfastly optimistic about the ability of our community to achieve our transportation vision.

Sincerely,



Tracy Winfree  
Director of Public Works for Transportation

# The Transportation Master Plan

## Putting Policy into Action

First adopted in 1989, the Transportation Master Plan (TMP) is the city's long range blueprint for travel and mobility. It has been updated several times by City Council with advice from the Transportation Advisory Board. The TMP helps serve a variety of broad community goals, under the umbrella of the Boulder Valley Comprehensive Plan.

## HISTORY



When Council adopted the first TMP, they created a new workgroup within the Transportation Division called the Alternative Transportation Center to develop options to driving alone.

Recognizing the value of a catchier name, the group soon became Great Options in Transportation, or GO Boulder. Over the years, the group has led programs and projects which make riding the bus, walking and biking more attractive, including strong marketing and outreach efforts. The multimodal approach is fully integrated into the work of the Transportation Division. Today, the GO Boulder team continues to engage people in the city's transportation planning efforts and policy initiatives while continuing to develop and implement innovative programs.

**1989** The original TMP called for shifting away from single occupant vehicle trips. It recognized the need to reconcile two sometimes conflicting goals: "to provide mobility and access in the Boulder Valley in a way that is safe and convenient" and "to preserve what makes Boulder a good place to live by minimizing auto congestion, air pollution, and noise."

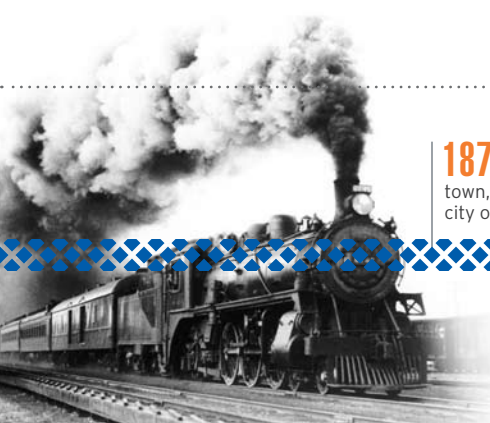
**1996 Update** Set an objective of "no long term growth in vehicle traffic" to limit the environmental and community impacts. The document committed to enhancing the community's ten major arterial streets to make them work for buses, bikes, and pedestrians as well as cars, making Boulder a pioneer in building "complete streets."

**2003 Update** Created three investment programs: what could be built with current funding, an action plan for a logical increment of improvements and a vision plan which described full-build out of the system.

### Four policy focus areas were identified:

- Enhancing Regional connections;
- Expanding Transportation Demand Management (TDM) efforts, especially via public private partnerships;
- Completing the multimodal corridors with 28th Street as the top priority;
- Identifying the funding necessary to achieve the goals of the plan.

**2008 Update** Recognized the planned FasTracks regional transit services, and outlined the funding challenges for transportation. The Complete Streets Investment Program identifies a strategic set of the highest priority investments for the community through 2025.



**1873** Two railroads come to town, from Erie and Golden with city or county contributions

**1883** First train runs from Denver through Boulder to Sunset at 8,000 ft. The line crossed Boulder Creek 66 times

**1877** University of Colorado opens

**1890** Boulder Wheel Club established for bicyclists. Larger Union Depot built at 14th and Walnut





GOAL 1989

“to preserve what makes Boulder a good place to live by minimizing auto congestion, air pollution, and noise.”





## How Long is Forever?

*“It takes forever to drive across town,” is a common complaint.*

The city has conducted a statistically accurate survey of auto travel time on two east-west and two north-south corridors in town over the last 25 years. These studies show that “forever” is about 15 minutes during rush hour traffic and that number has remained relatively steady over the years. While traffic has increased over the life of the study, the city has been able to maintain travel times with intersection improvements and traffic signal coordination.







## FACT

*In the past twenty years, the city has received more than two dozen transportation-related awards, including recognition for the TMP, the Community Transit Network, Eco Pass programs, parking management, and a number of construction projects. A complete listing of awards can be found at [www.BoulderTMP.net](http://www.BoulderTMP.net)*

Measuring progress:

# How is Boulder doing?

**If you don't count it, it doesn't count.**

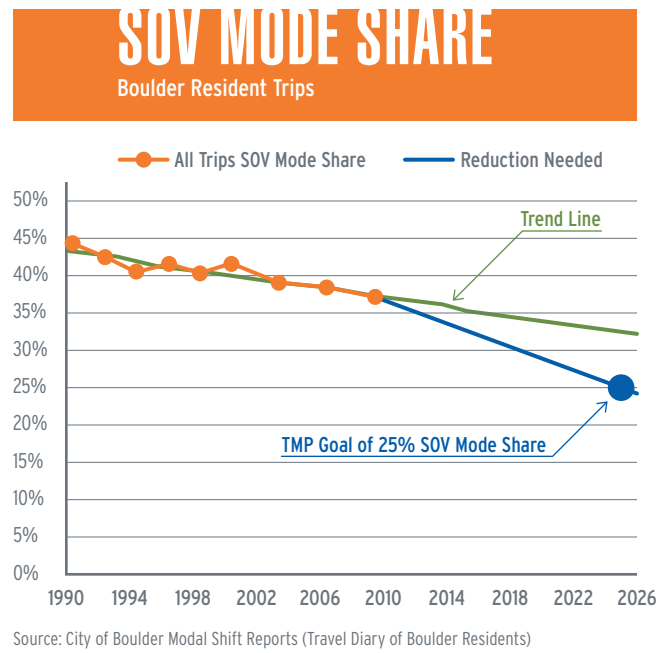
Boulder's quest to provide a balanced, multimodal transportation system includes a number of goals and objectives by which progress is measured. Today, some of the measurable objectives are being achieved while others are not yet on track. The city has a strong metrics program that provides multiple sources of data to track progress toward the goals. Travel surveys are repeated at regular intervals, and the results are supplemented with vehicle counts, bicycle counts, transit ridership statistics, travel time studies and census data to create a robust picture of travel in the city.



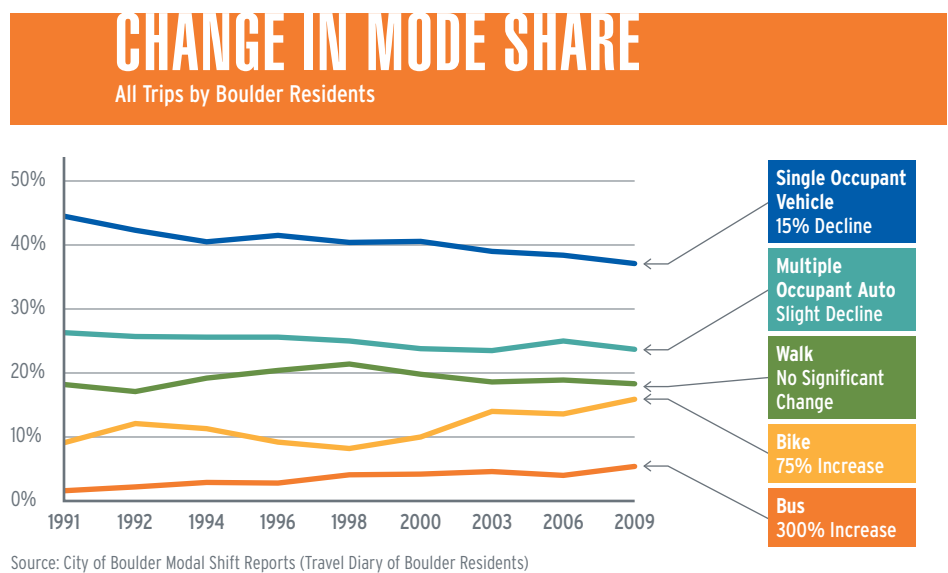
**In 2008, the League of American Bicyclists' Bicycle Friendly Communities awarded Boulder its highest honor, the Platinum level designation. Boulder is one of three communities that have received this award.**

The TMP has a goal of reducing the number of trips made by one person driving alone in a car (called “single occupant vehicle” mode share or SOV) to 25 percent of all trips by Boulder residents by 2025. While Boulder has made progress toward the goal, the city is not currently on track to reach it. Since 1990, SOV trips have been falling by about 0.4 percent per year. That rate would need to double to 0.8 percent per year to reach the goal. Today, each resident takes an average of about 12 trips per week in an SOV. If each resident shifted four of those trips to other modes, the goal would be reached.

The areas of the city with paid parking, including downtown and the CU campus, are on track to achieve or exceed the goal. A combination of additional investment and stronger policy could help reach the goal, as would external factors such as an increase in the price of gasoline.



Since 1990, the city has seen increases in transit and bicycling use, while walking has remained relatively stable and single occupant vehicle use has declined. This chart is based on travel diary surveys of residents. The city uses these surveys as a means to track changes over time, rather than to provide a national comparison, as survey methodologies differ significantly.



**1894** Boulder Creek floods destroy bridges in town

**1898** Chautauqua opens

**1899** The electric Boulder Street Railway opens to carry visitors to Chautauqua with 12 cars and 5 cent fares

**1899** New rail line to Ward at 9,450' and advertised as the "Switzerland Trail of America"

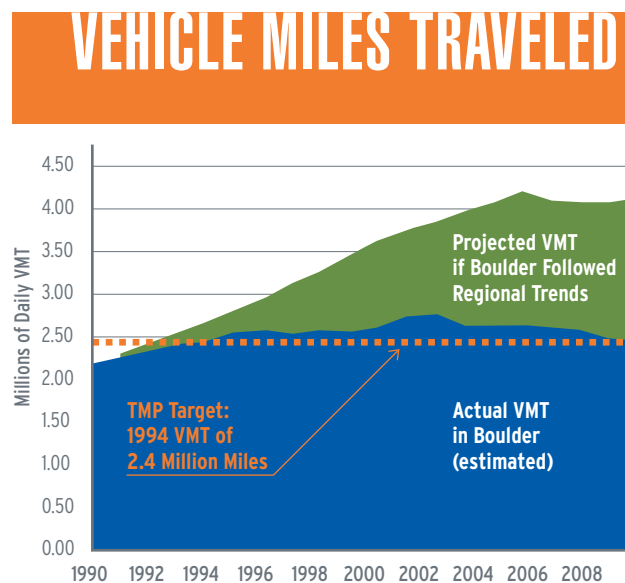




FACT

“Since 1990, the city has seen increases in transit and bicycling use, while walking has remained relatively stable and single occupant vehicle use has declined.”

The 1996 TMP update adopted a goal of holding vehicle miles traveled (VMT) steady at 1994 levels. As of 2009, the city is achieving this goal. VMT is measured by a combination of regional modeling, counts of cars entering Boulder at key locations and intersection counts. While some of the progress can be attributed to Boulder's efforts, the economic downturn has reduced VMT growth across the nation as well.



**1906** Flagstaff road completed. 26 residents drove autos in town and three bridges across Boulder Creek were rebuilt to accommodate them

**1906** Bike racks installed downtown

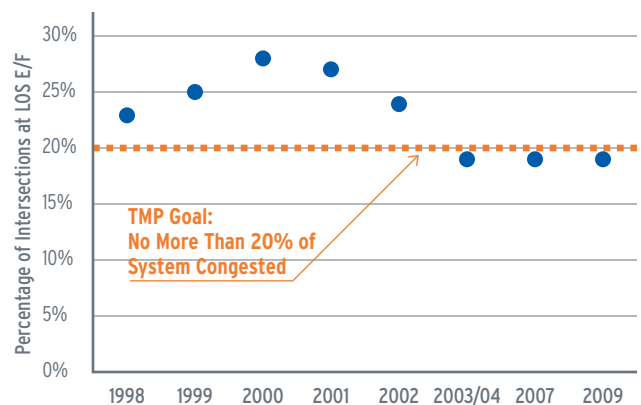
# VEHICLES

One of the TMP objectives calls for minimizing the number of intersections that are heavily congested to support efficient travel by car and bus. In 2009, less than 20% of intersections were heavily congested (in technical terms: Level of Service E or F), meeting the TMP objective. Signal timing enhancements, intersection operational improvements and shifting trips away from automobiles are factors in this success. Economic instability and changes in gas prices are short term factors, however it appears that Boulder's policy approach is making progress.

The American Community Survey (ACS) provides insight into how Boulder's mode shares compare to other communities and the nation as a whole. The 2009 ACS shows that Boulder sees significantly more trips made by other modes when compared to the Denver region and the nation as a whole. People residing in Boulder ride transit at twice the national average, walk three times as often, and ride bikes 20 times more often than the national averages. These results parallel the trends in the city's surveys which show these mode shares increasing over time.

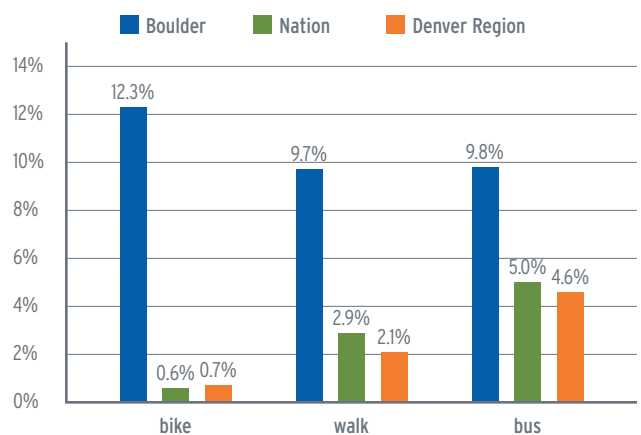
## CONGESTION

At Signalized Intersections



## MODE SHARE 2009

Journey to Work by Residents



Source: 2009 American Community Survey Journey to Work data

**1908** Denver and Interurban train started service to Boulder, Louisville, Superior, Marshall and Eldorado Springs. 18 trains a day came into Boulder

**1908** Frederick Law Olmstead, Jr. studies Boulder and stressed the paving of streets for health and safety. He recommends 80' wide streets, 20' wide alleys and 300' blocks as ideal

**1916** Council orders first speed limit signs installed





FACT

Transit ridership has grown to 34,000 daily trips in 2009.



# Evolution of the Transit System

In 1990, 15,100 customers rode the bus in Boulder each day. Transit service consisted of a hub and spoke system focused on the downtown, with buses coming every half hour at best. Since then, transit has become a centerpiece of the transportation system, transformed through deliberate initiatives to attract new riders to transit. Transit ridership has grown to 34,000 daily trips in 2009.



The launch of new services and programs (indicated by icons) catalyzed increases in ridership. Rising gas prices tend to increase transit use. Economic downturns (indicated by red bolts) tend to reduce transit use and traffic in general.

## Community Transit Network

In the early 90s, the city reached out to the community for help in designing transit service that worked for them. Their ideas and enthusiasm helped launch Boulder's Community Transit Network and gave birth to the Eco Pass program. Based on their input, the city launched the HOP service in 1994 to connect major activity centers. Buses come every 10 minutes or less. The vehicles have big windows, seating that promotes conversation, on-board music and branding with bold and distinctive graphics. The HOP's ridership exceeded projections within the first six weeks of service. The success of the HOP was followed by the SKIP on Broadway, which transformed service along the city's busiest transit corridor and almost tripling ridership. The JUMP, BOUND, STAMPEDE, DASH and BOLT followed, offering both local and regional services.

Most transit services in Boulder are operated by RTD, the region's transit agency, primarily funded by a 0.6 cent regional sales tax. The HOP is operated by Special Transit, a local non-profit, whose partnership on this innovation helped build the credibility to expand to other services. The city partners with RTD and the university students to fund the HOP, and subsidizes RTD services on the JUMP and BOUND to maintain high frequencies. The University of Colorado and Boulder County also augment RTD's local and regional services to make transit a convenient and attractive option. As is the case across the country, transit funding is a major challenge, with service cutbacks and rate hikes a current reality.

**1922** City Manager Scott Mitchell proposes streets should be paved. Boulder residents resist having to pay for luxuries like streets, sewers and water systems. Mapleton Hill residents charge he wants to "pave over the city" and get temporary injunction on paving

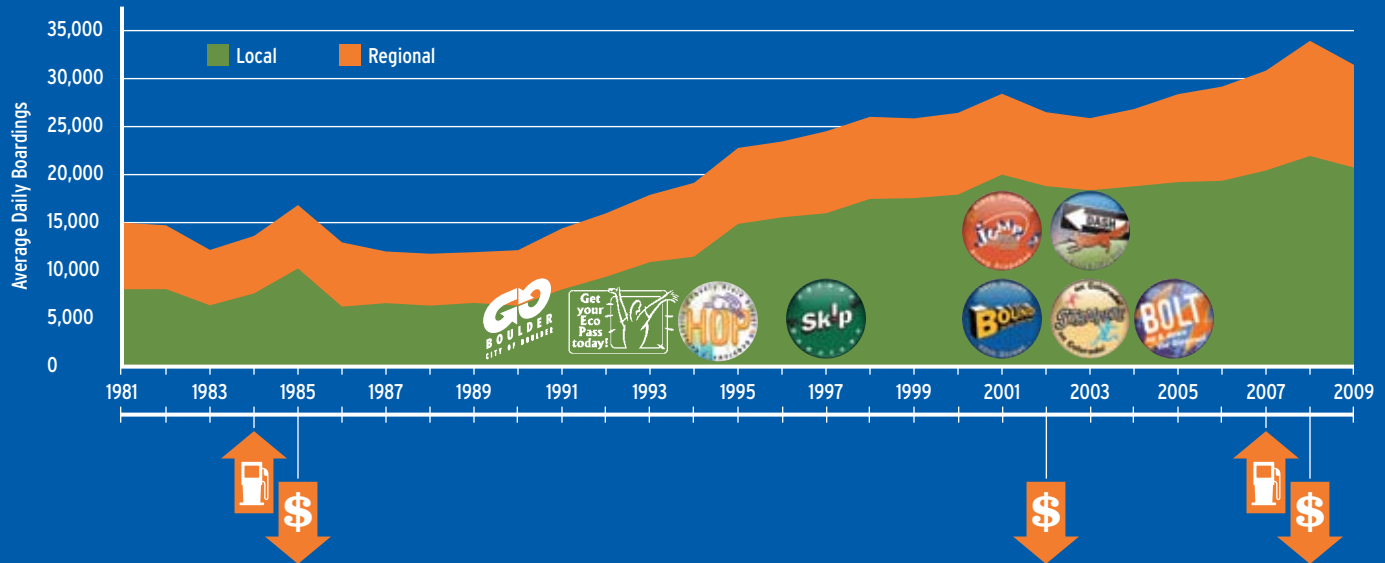
**1917** Pearl Street paved

**1923** Boulder Street Railway management taken over by Public Service Company



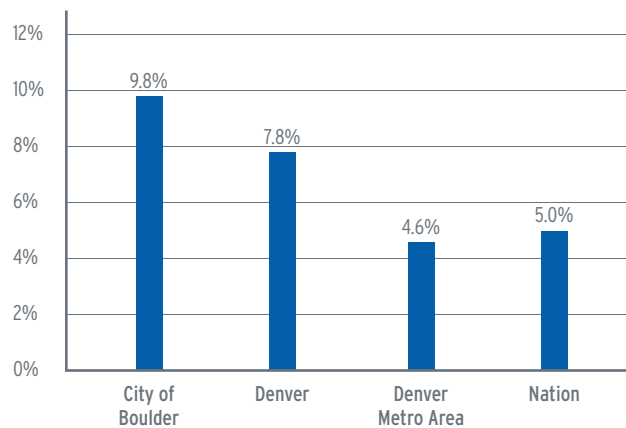
# Boulder Transit Use 1981 to 2009

Logos represent developments in Boulder transit.



## JOURNEY TO WORK BY BUS

Boulder Residents, 2009



Source: 2009 American Community Survey



**1931** Public Service Company purchases a fleet of 4 Mack buses and the last streetcar is retired on June 1

**1940** First traffic signal installed at Broadway and Arapahoe. It was turned off due to gas rationing during the war, and turned back on in Feb. 1945



# BUSBIKEWALK



## Uniquely Boulder

# Human Powered Action

Biking is an integral part of Boulder's identity. Long before the TMP was adopted, Boulder was celebrating the bicycle with iconic events like the Red Zinger and Coors Classic races. The city's bicycle program launched one of the country's first Bike to Work Days in 1977 and outfitted pathway maintenance crews with bike trailers. The adoption of the TMP solidified the commitment to bicycling. Today, Boulder residents make 12.3 percent of their work trips by bicycle, a rate 20 times the national average. Boulder is home to many Olympic and professional athletes, numerous bicycle-related businesses and organizations and a vibrant bike culture, and many regular folks who use their bikes to enjoy Boulder's great outdoors.

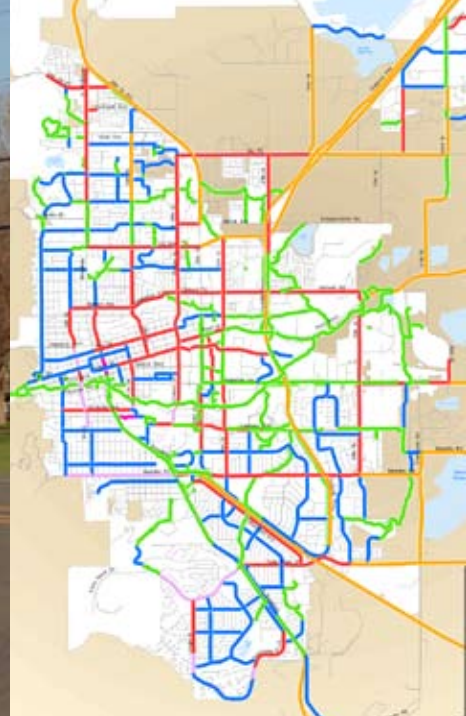
“Today, Boulder residents make 12.3 percent of their work trips by bicycle, a rate 20 times the national average.”



## An estimated 95 percent

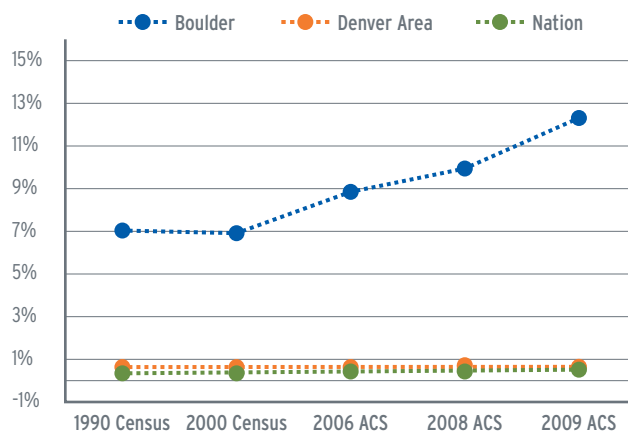
of Boulder's arterial streets accommodate bicyclists, and all local and regional buses in Boulder are equipped with bike racks. The city's system is bolstered by a robust network of pathways and paved shoulders in surrounding Boulder County to facilitate longer trips by bike.

FACT



## JOURNEY TO WORK BY BIKE

Boulder Residents



Source: US Census and American Community Survey

Boulder has a robust bicycle network, with 150 centerline miles of bike facilities. In comparison, the city has 305 centerline miles of roads. The system includes:

- 1 52 miles paved multi-use pathway with 76 underpasses
- 2 37 miles of road with bike lanes on both sides
- 3 9 miles of road with paved shoulders
- 4 43 miles of roads designated as bike routes
- 5 10 miles soft surface trails



**1946** 340 parking meters installed in downtown

**1952** Toll road opens with a toll of \$.25 for Boulder to Denver travel. Eight months after opening, traffic was up 11 percent on most arterials

**1949** Denver-Boulder Bus Company established with 17 buses running through Lafayette to Denver

# Highlights:



Boulder celebrates **Walk & Bike Month** in June, with over 95 events, highlighted by Bike to Work Day, with 5,000 participants in 2010. The month-long celebration is coordinated by Community Cycles, a local non-profit, with support from the city. The city partners with Community Cycles on a variety of other bicycling efforts.



The city's second **Winter Bike to Work Day** drew 1,200 participants in 2010.



The city installed two **bike corrals** in downtown Boulder in 2010, replacing on-street parking spaces with bike parking. A bike parking survey showed a 58 percent increase in bikes being parked in the downtown area between 2007 and 2010.



**GOBikeBoulder.net** offers personal bike routing along Boulder's on-street and off-street bikeways.



A **public bike sharing system** is scheduled to be launched in 2011. The city is partnering with Boulder Bike Sharing and B-cycle on the system.



Boulder has developed several treatments to reduce conflicts where multi-use pathways cross roadways, **special signage** to remind drivers to be aware when crossing, and raised right turn bypass islands to reduce conflicts between the modes.



When the snow falls, two **maintenance crews** are mobilized at the same time: one for roads and one for the pathway system. The bikeway winter maintenance team consists of two trucks and a special plowing machine. It generally takes about 8 hours to plow the entire pathway system.

## Greenways

Boulder's Greenways program has developed paved pathways along Boulder Creek and its six tributaries. Today, the system forms the backbone of Boulder's off-street system as 52 miles of multi-use paths with 76 underpasses provide access across the community with minimal street crossings. The Greenways program grew out of a Boulder Creek project launched in 1984. It integrates multiple objectives of habitat protection, water quality enhancement, storm drainage and floodplain management, providing trails and recreation opportunities while protecting and enhancing cultural resources. At the foot of the Rocky Mountains, Boulder has the highest flash flood risk of any community in the state. Underpasses and pathways are designed to direct and channel floodwaters, allowing flood control dollars to be used to fund construction of the pathway system.



**1956**

Boulder architects Charles Haertling and Tician Parachristou proposed a 20 year plan for closing the downtown to cars from 9th to 17th and Pine to Arapahoe

**1964**

Boulder hires first full time traffic engineer who was given authority to install stop signs and traffic signals without a Council hearing and approval

**1960**

Council grants authority to hire the first traffic engineer as numerous intersections produce traffic jams. The city engineer takes on this title. The terminus of the toll road at 28th and Baseline is known as "malfunction junction"







## FACT

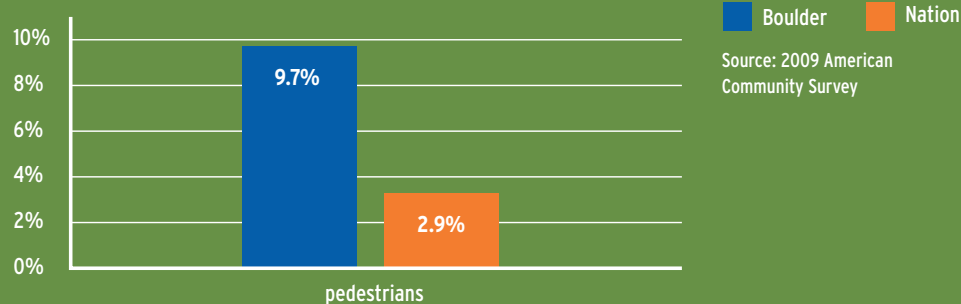
The Pearl Street Mall (below) in downtown Boulder offers an outstanding pedestrian environment. Closed to all but foot traffic since 1977, the engaging environment and abundant pedestrian amenities make a walk along its half-mile length a pleasant stroll.

## Walking

Walking is recognized by the TMP as the primary mode of travel. Virtually every trip, including those by car, includes some travel by foot. Boulder has worked hard to provide an accommodating environment for pedestrians. Every day, thousands of people use Boulder's sidewalks and trails to exercise, shop or travel to school or work.

### JOURNEY TO WORK BY FOOT

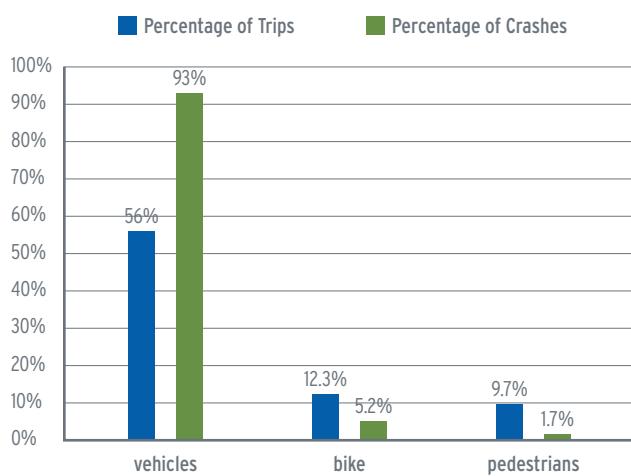
Boulder Residents, 2009





## BOULDER ACCIDENTS

By Mode, 2009



Source: 2009 American Community Survey and Boulder Police Department

Accident analysis shows that the rate of crashes involving bicyclists and pedestrians is well below the percentage of trips made by those modes. While these numbers are encouraging, accidents involving a bicyclist or a pedestrian are more likely to result in injuries. The City of Boulder Transportation staff monitors the transportation system on an on-going basis, with a goal of continuous improvement in safety, access and efficiency.

## Breaking down barriers

Major streets can be significant barriers to walking. The city has a goal of providing safe pedestrian crossings of major streets every 1/8 mile. In 2000, the city began implementing new enhanced pedestrian crossing treatments to draw attention to busy crosswalks and to encourage drivers to yield to pedestrians. The devices have encouraged more pedestrian activity at these locations with drivers yielding more frequently.

## Repairing sidewalks

Broken or damaged sidewalks are not only an eyesore and an inconvenience, but can be a safety hazard and barrier to pedestrian travel. The city's Sidewalk Repair Program was created in 1993. It divides the city into zones, and completes all repairs in the highest priority zone before moving on to the next zone. Repairs have been completed in 16 of the 30 zones since the inception of the program.

## Completing missing links

The TMP calls for "eliminating breaks and discontinuities in the sidewalk system" and "ensuring adequate connections to public transit." The Missing Sidewalk Links Program identifies and constructs missing segments across the city, ranging from local residential streets to arterial streets in commercial and retail areas to streets adjacent to schools. The program has designated funding of \$75,000 per year through the city's transportation budget.

**1964**

On the second try, voters approve a better defined sales tax for capital expenditures

**1967**

Toll stations closed as US 36 pays off its bonds 13 years ahead of schedule

**1969**

RTD created

**1967**

One cent sales tax passes with .6 cents dedicated to transportation and .4 cents dedicated to open space





The city and the Boulder Valley School District have worked together for ten years to increase the number of children walking and biking to school.

## Safe Routes to School

Walking and biking to school provides numerous benefits to children and the community, so the city works closely with Boulder Valley School District on school transportation issues. In Colorado, the state requires open enrollment as well as focus and charter schools, which create additional transportation challenges since a significant number of students are driven to school. Nevertheless, robust encouragement programs spearheaded by parent volunteers have achieved spectacular results. Bear Creek Elementary received the James L. Oberstar Safe Route to School award in 2009. Other innovative projects help make biking and walking an option for many students.

In 2001, the city received a three-year federal grant to hire an alternative transportation coordinator to work within BVSD. Since then, BVSD has funded the position on an on-going basis and achieved measurable results.

BVSD and the city partner on Safe Routes to School efforts, with the city applying for federal funds for infrastructure projects around schools and BVSD taking the lead on the encouragement and education efforts. The city and BVSD together have received \$1.56 million in federal Safe Routes funds since 2005.

In 2009, city staff worked closely with neighbors, parents and BVSD when a proposal to expand parking and the drop-off area of an elementary school met resistance. The city participated in a collaborative effort that instead developed a comprehensive travel management plan that promotes walking and biking, accommodates safe student drop-off and preserves playground space which had been slated for parking.



**1970** City Transportation Division formed. Boulder had 155 miles of roads, 13 miles still unpaved





# Completing the Streets

The city's 2003 TMP update included a focus on transforming the major streets that accommodate travel across town and connect with the regional system. A series of improvements were identified, and are being systematically implemented, to better accommodate all modes and better integrate adjacent land uses along these important corridors. The approach has made Boulder a national leader in implementing "complete streets."

The city's work to transform two corridors into complete streets illustrates the challenges and opportunities offered by Boulder's "tale of two cities" with two very different land use patterns. Boulder west of Folsom was developed prior to 1950, with an interconnected grid system of streets providing "good bones" for a multi-modal system. To the east is classic post-WWII, car-oriented development featuring super-blocks, disconnected streets and large swaths of parking.

## Broadway

**Broadway is the major north-south arterial in the western half of the city, linking residential areas, the University of Colorado campus, the Pearl Street Mall and Uni Hill business districts, and a large complex of federal labs. It has "good bones" in terms of adjacent land uses and walkability with a connected grid system of streets and paid parking in the downtown and on campus. It is Boulder's most mature example of a complete street. Today, as much as 20 percent of traffic along the corridor travels by bike, foot and bus.**

**1970**

The Central Area General Improvement District (CAGID) is formed to provide parking and related improvements in downtown



**1971**

City Manager Tedesco asks Council to appoint a Citizens' Advisory Committee on Public Transportation





The SKIP high frequency bus service runs the entire length of the corridor, and is the second busiest local service in the RTD district. The southern half of the corridor enjoys strong regional transit connections to Denver. The corridor serves as a major thoroughfare for bicyclists, with facilities ranging from adjacent multi-use paths, frontage roads signed as bike routes, on-street bike lanes and a four-block contra-flow lane, built in 1993. In the early '90s, the city constructed a signature pedestrian and bicycle underpass at College Avenue to eliminate crossing conflicts between vehicles and students.

Smaller details such as wider sidewalks, raised right-turn bypass islands, pedestrian-actuated flashing crosswalks, innovative signage and vehicle turning restrictions have helped make the corridor a functional and attractive thoroughfare for bicyclists and pedestrians. At the northern end, the city added on-street parking to help invigorate local businesses in the newly redeveloping North Boulder area.

The city has replaced the asphalt road surface with concrete for a significant portion of the corridor, a major project with long-term maintenance benefits. Efficiency improvements at intersections, such as left and right turn lanes, have helped auto flow. Where possible, utilities have been put underground.

The next major project for Broadway will be improvements at Euclid Avenue, adjacent to the University of Colorado. This transit stop is one of the busiest in the RTD region; bicyclists and pedestrians flow in all directions through the intersection and on the adjacent multi-use path. All travel modes will benefit from the project, as the project will improve the transit stops, build a pedestrian underpass, separate bikes from pedestrians and improve automobile operations. The \$7.8 million project is an ambitious partnership funded by the City of Boulder, Boulder County, RTD, CU students and administration, CDOT and the federal government.

## 28th Street

**While Broadway had good bones, 28th Street posed a much more significant challenge. The continuation of US 36 in Boulder, it carries 50,000 cars a day. In the early 2000s, it was a typically unattractive urban arterial, dominated by cars and parking lots, so the city launched a planning process to rethink the corridor.**

Significant public input, culminating in a design charrette, developed a new vision for the corridor. The southern section was dubbed "Hello Boulder" as it serves as the main gateway into the community and to the University of Colorado campus. This section was transformed into an attractive and functional complete street through a \$10 million project, split between local and federal funds. The improvements included refurbishing the frontage road to prioritize buses and bikes, adding multi-use paths, transit superstops and extensive landscaping improvements. Public art was integrated into the project at numerous locations.

In an example of private investment following public spending, the city rezoned the property along the frontage road, allowing a string of hotels to be replaced with denser development of mixed-use flats, townhomes and small-scale retail. The transportation project was completed in 2005, and was recognized with an Exemplary Human Environment Award for Encouraging Non-motorized Transportation by the Federal Highway Administration in 2008.



**1972** Voters turn down bond proposal for transportation improvements including a quarter of the spending for bikes

**1974** RTD takes over the Boulder bus system from Public Service Company

**1973** RTD funding of half a cent sales tax approved though it fails in Boulder and Douglas Counties

Since 1990, the City has completed a number of major infrastructure projects

## Transportation Projects Construction Timeline Summary

- Valmont Reconstruction 47th Street to 55th Street - 1992
- Bear Creek Bikeway - under Baseline to US36 - 1992
- College Underpass at Broadway - 1992
- 13th Street contra-flow Bikelane - 1993
- Broadway Corridor reconstruction - Regent to University - 1994
- Broadway Improvements (Violet to US 36) and Broadway Ped/Bike Underpass at Fourmile Canyon Creek - 1994
- Civic Plaza and 13th street bikelanes and streetscape from Arapahoe to Canyon - 1996
- 30th Street - Arapahoe to Colorado - Bikelanes - 1996
- Table Mesa - Broadway to Lehigh - Bike Climbing Lane 1997
- Lookout Road - 63rd to 75th - bikelanes and MUP - 1997
- 55th Street Improvements (Baseline to Arapahoe) and 55th Street Ped/raised crossings and intersections/Bike Underpass at Wellman Canal- over 2 miles bike lanes added - 1996
- Baseline Bikelanes - 55th to Cherryvale - 1997
- Baseline Ped/Bike Underpass at Skunk Canyon Creek - 1997
- University Hill - Streetscape Improvements and Urban Design - 1997
- Broadway/Bear Creek Underpass - 1998
- Arapahoe - 55th to 63rd - On street bikelanes - 1998
- Norwood Broadway to 26th Street - Streetscape, traffic calming and MUP & sidewalk - 1998
- Pearl Streetscape - 15th to 18th Street - 1999
- Broadway Ped/Bike Underpass at Skunk Canyon Creek - 2000
- Table Mesa Reconstruction - Bikelanes - sidewalks - 2001
- 28th - Phase 1 (Baseline to Taft) Multi-modal, landscaping and art Improvements - completed in 2003
- Broadway Reconstruction Project (University to Pine) and Broadway Bridge at Boulder Creek - 2003
- 28th - Phase 2 (Taft to Arapahoe) Multi-modal, landscaping and art Improvements - completed in 2006
- 28th/Iris Intersection Improvements Project - completed in 2007
- Baseline Bikelanes (Broadway to 27th Way), and 27th Way Ped/Bike Underpass at Skunk Canyon Creek
- 28th/Pearl Intersection Improvements Project - 2008
- 28th/College Avenue Transit Improvements - 2008
- Foothills and Arapahoe Intersection and Arapahoe Ped/Bike Underpass at Bear Canyon Creek - 2007
- North Broadway bikelanes Iris to Norwood - 2009
- Broadway Reconstruction Project (Pine to Iris) - 2010
- 28th/Valmont Intersection Improvements Project - 2010



The development of the Twenty Ninth Street lifestyle shopping area in 2006 added multi-use paths and new street connections in the central section of the 28th Street corridor, which was dubbed “New Town” in the design charette. Improvements led by the city include improved crosswalks and raised right turn bypass islands at major intersections to increase safety for bicyclists and pedestrians. In the northern section, dubbed “Service City,” the city has completed some sections of multi-use pathway and a lane shared by buses, bicycles and right turning cars. Flashing crosswalks at key locations along the corridor provide additional crossing opportunities.

Walking and biking along 28th Street has improved significantly. However, funding challenges mean that the full range of improvements identified for the corridor will not be completed for several years.

The 28th Street project has highlighted the challenges of implementing complete streets in an automobile oriented corridor. The current pattern of extensive parking lots and large retail stores creates an environment that is daunting to pedestrians and bicyclists. At the same time, these businesses are integral to Boulder’s economic vitality. A combination of city-led transportation projects and a gradual evolution of urban design as properties redevelop will result in a more attractive public realm on the 28th Street corridor in the long-term.

**1976** Pearl Street Mall created and 27th Street South Link was under construction

**1977** Boulder Valley Comprehensive Plan adopted, calling for many street widenings and extensions

**1977** First Bike to Work Day celebrated in Boulder





GO Boulder's efforts are amplified by a network of 450 volunteer employee transportation coordinators at 230 businesses. Each year, GO Boulder honors the tireless efforts of these excellent volunteers.



# Programs for Change

The adoption of the TMP launched a strong travel demand management (TDM) effort of programs and strategies to increase the efficiency of the transportation system by changing travel behavior. Marketing and education efforts have had a key role in the city's overall strategy.

## TDM highlights

GO Boulder has launched several TDM efforts with support from federal air quality grants. Recent grants have focused on individualized travel planning, increased Eco Pass pickup and the Driven to Drive Less campaign, launched in 2010.

The city's efforts are amplified by a network of 450 volunteer employee transportation coordinators at 230 businesses representing more than 25,000 employees. They serve as GO Boulder liaisons within their companies to promote programs and services and to encourage their co-workers to use transportation options.

GO Boulder partners with Boulder East, a non-profit organization of businesses focused on providing TDM options to employers in the eastern sector of the city. Boulder East has developed programs such as bike pools, Eco Pass pick up and saved 6.2 million pounds of carbon dioxide over a two year period.

New developments with significant traffic impacts are required to develop and implement a TDM plan.

**1980** After 17 neighborhood meetings, the paving of Goss Grove streets is completed along with traffic control measures



## Eco Pass

The city's principal program for TDM is the Eco Pass, a discounted annual transit pass purchased by employers and neighborhoods. City surveys have found that those with an Eco Pass are five to nine times more likely to use transit than those without the pass. If transit is used for the commute trip, that employee is likely to walk, bus or bike for other trips during the day. In 2010, nearly 68,000 people who live, work or study in Boulder have transit passes.

The program is provided by RTD, and uses an "insurance" model. Per-pass costs are low, but the passes must be purchased for all employees or neighbors, providing RTD sufficient revenue to cover the transit trips taken by pass-holders. GO Boulder subsidizes the purchase of Eco Passes for both neighborhoods and businesses.

The program was piloted by downtown Boulder businesses and RTD in 1989. After the program proved successful, RTD began offering it region-wide as the Business Eco Pass in 1993. The University of Colorado student pass program also began at this time. The Neighborhood Eco Pass was piloted in 1993 and became an official RTD program in 1997.

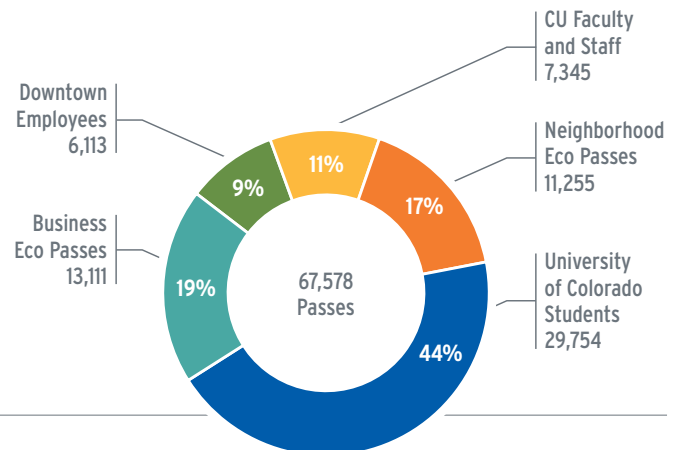


## Downtown

In Boulder's central downtown area, only about a third of employees arrive by car. Downtown employees are two to three times more likely to ride transit, bike or walk than their counterparts elsewhere in the community. Paid parking is a key motivator, supported by strong bicycle and pedestrian infrastructure and high-frequency local and regional transit service. Revenues from parking meters and garages are used to buy Eco Passes for all 6,113 employees who work downtown, based on the concept that shifting employee trips to other modes will free up parking for customers. The downtown area estimates that it costs \$24,000 to build a parking space in a structure, and \$600 per year to maintain it, compared to \$111 per employee for an Eco Pass in 2010.

## ECO PASSES IN BOULDER

2010 • 67,578 Passes Available to Neighbors, Workers and Students



**1985**

Construction on the Boulder Creek restoration project, including flood mitigation, channel restoration and the multimodal path

**1989**

Creation of GO Boulder. Creation of Downtown Bus Pass by Downtown Businesses



**1989**

First Greenways Plan adopted. Adoption of first Transportation Master Plan calling for a 15% reduction of single occupant vehicle use



# Partnering on the bigger picture



## Land Use

The collaboration between land use planning and transportation is integral to developing a balanced transportation system. Boulder has a growth boundary articulated in the Boulder Valley Comprehensive Plan and reinforced by 43,000 acres of city-owned open space which circle the city. As a result, Boulder's growth will continue to be inward, in redevelopment and increasing density. In terms of transportation, this has kept Boulder a compact city, and allowed infrastructure dollars to be spent enhancing the system rather than building new roads to new "green field" developments. On the downside, Boulder's growth limits have contributed to higher housing costs and increased regional commuting trips, with about 50,000 people commuting in to work in Boulder each day. Anticipating changes to the community, Boulder's land use, housing and transportation planning teams work together to create area plans and master plans for focused areas of the community, such as Boulder Junction.

## Boulder Junction

Boulder Junction is a new pedestrian and transit oriented neighborhood planned on 160 acres adjacent to the future FasTracks regional commuter rail and bus rapid transit stations. In 2007, the city adopted an area plan to guide the area's redevelopment. The combination of mixed use and relatively dense redevelopment, a fine grained and well connected transportation system, parking management, and a comprehensive and aggressive TDM program is expected to reduce single occupant vehicle travel by more than 70 percent for those who live and work in the area. Two unique improvement districts are being developed to manage parking and to provide Eco Passes and other TDM programs.

## Climate Action Plan

In 2002, the Boulder City Council passed a resolution committing the city to achieving the Kyoto Protocol goals for greenhouse gas reduction by 2012. In 2006, Boulder voters passed the country's first-ever carbon tax - a fee on household and business electricity use - to fund the Climate Action Plan to achieve the goals. A variety of programs have been put into place, including a robust partnership with Boulder County, and progress is being made. Transportation accounts for 22 percent of greenhouse gases in Boulder, so accomplishing the goals of the TMP have taken on even greater urgency.

**1990** First city travel diary travel survey

**1991** New federal transportation legislation (ISTEA) provides supportive national policy

**1991** CU Students vote by a margin of 4 to 1 to increase student fees to turn their student ID's into unlimited-use bus passes

## FasTracks

In 2004, voters in the Denver region approved FasTracks, a system of regional rapid transit services. The package levies a 0.4 percent sales tax to build 122 miles of new commuter rail and light rail, 18 miles of bus rapid transit (BRT) lines, and enhanced bus service across the eight-county district. The Boulder area is slated to receive two services: Commuter rail service, called Northwest Rail, and BRT service along US 36, the highway connecting Boulder and Denver. While originally slated to be completed before 2020, funding challenges may delay the complete regional program. The US 36 project, including the FasTracks BRT service and a regional bikeway, has made significant progress toward construction with the assistance of a powerful partnership along the corridor.

## US 36

As the major connection between Boulder County communities and the rest of the Denver region, the US 36 corridor has seen significant development and traffic growth over the last 20 years. Planning for improvements, which began in the mid-1990s, was finally completed in 2009 with the adoption of an Environmental Impact Statement for the corridor. While early discussion identified as many as six lanes in each direction as a possibility, the final plan lays out a strong multimodal solution, with a managed lane in each direction to accommodate BRT, carpools and toll-paying vehicles and a bikeway the entire length of the corridor as first phase improvements. Key players in the creation of the vision was the US 36 Mayors and Commissioners Coalition, representing the counties and cities along the full length of the corridor, and the public-private partnership of the US Commuting Solutions organization. The united vision of this coalition and its efforts at the regional and national level is bringing dollars to the corridor to fund the improvements.

In 2010, the corridor was awarded a federal TIGER grant which has leveraged significant local and state dollars to construct a portion of the managed lane and bikeway.



## University of Colorado at Boulder

The University of Colorado-Boulder campus (CU) is a major activity center and employer, with almost 30,000 students and nearly 8,000 faculty and staff. Over the years, students and the CU Environmental Center have been integral in the evolution of the university's transportation policy. In 1991, students voted, by a four to one margin, to assess themselves for an unlimited transit pass, similar to an Eco Pass, which continues today. At the time, students drove alone for 55 percent of trips, and student bus ridership was about 300,000 trips per year. Transit ridership increased 200 percent the first year of the student transit pass and reached 2.9 million trips in 2009. CU began purchasing Eco Passes for all faculty and staff in 1997, which resulted in an 85 percent increase in transit use in the first year. CU partners with the city to support a high-frequency connector transit service called the Stampede. The campus has also significantly improved pedestrian and bicycle facilities, and partners with the city on projects to improve access to campus. The parking supply on campus is limited, managed and self supporting. By 2009, SOV mode share by students for travel to campus dropped to 11 percent.

## Boulder County

The county, which surrounds the city, plays a key role in regional transportation. The city and county have shared the comprehensive plan for the Boulder Valley since 1977, and the county has embraced a strong vision for a multimodal transportation system. The county provides funding to augment transit services between communities, actively markets the Eco Pass, and was instrumental in piloting an Eco Pass program for residents of low-income housing. A county sales tax, approved by voters in 2001 and continued in 2007, is adding bikeable shoulders to county roads and is expanding the regional pathway system. In 2009, the county's update of their transportation plan recognized the role of transportation in greenhouse gas production and includes goals to minimize environmental impact and to ensure equitable access and safety for all modes.

**1992**

College Underpass constructed in partnership with CU

**1994**

In October, HOP high frequency service started linking CU, Downtown and Crossroads Mall. It is started with the first round of awards from the new ISTEA federal funding bill

**1993**

Neighborhood Eco Pass program started

**1994**

Special Transit helps HOP high frequency service pass its ridership goals within the first six weeks of service







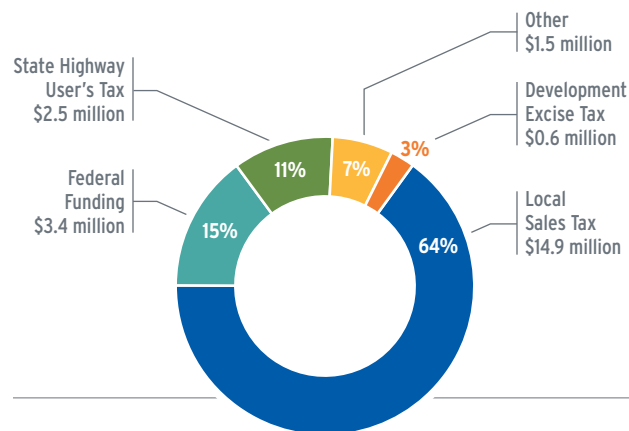
# Transportation Finance

In 2010, the City of Boulder's budget for transportation was \$22.9 million. The primary source of revenue is a 0.6 percent sales tax, specifically dedicated to transportation, which was approved by voters in 1967. Federal funding, which is tied to large infrastructure projects, makes up the next largest source in 2010. Development Excise Taxes, which are charged on new development in the city, contribute a small amount to offset the impacts of the development.

## Budget snapshot

### TRANSPORTATION REVENUES 2010

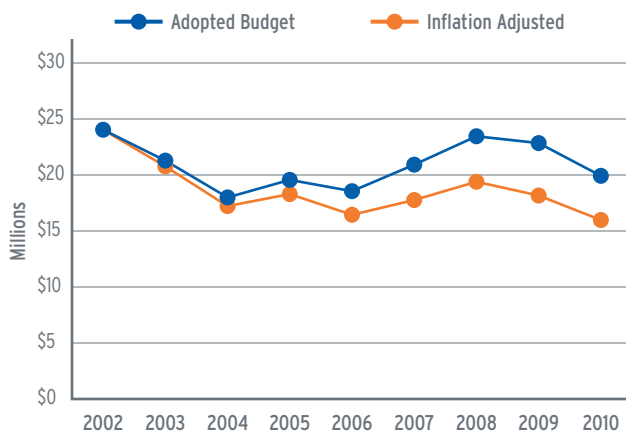
Adopted Budget



**1997** SKIP high frequency service replaces the 202 on Broadway

## DECLINE IN PURCHASING POWER

Annual Transportation Budget Adjusted for Inflation  
(Without Federal Funding)



From 2002 to 2010, the Transportation Fund, which supports the majority of the city's transportation spending, declined 17 percent in actual dollars. The decline in 2002 and 2003 was due to the high tech slump and increasing regional retail competition. The budget began to recover in 2007 and 2008, then dropped again. When adjusted for inflation, the decrease in spending power is even greater, with an estimated 33% decline in purchasing power since 2001.

While new projects generally get the most notice, a majority of the Transportation Division's work is in operations and maintenance. Keeping the existing system safe and operating efficiently is the top priority of the city's TMP. The percentage of the budget which goes to operations and maintenance has grown from about 60 percent in 2001 to nearly 80 percent in 2010.

In an effort to reduce costs, the Transportation Division has implemented both efficiencies and reductions. The maintenance workgroups within Public Works were merged and cross-trained to increase efficiency and responsiveness. A streamlined work force can now be mobilized for winter storms or other emergencies such as water pipeline breaks. The department has compiled a GIS-based digital inventory of public infrastructure, including all signs and other items in the public right of way, and a pavement management system for tracking the condition of roads and sidewalks. This allows more efficient dispatch and response, and facilitates tracking and evaluation.

Reductions have been guided by the TMP, which places top priority on the safety and operations of the existing system. Since 2001, the neighborhood traffic mitigation program has been eliminated and aesthetic efforts such as street sweeping and median maintenance have been reduced. The rate of improvements to the system slowed significantly, so that today, the only major projects underway are those that leverage city funds with larger federal grants. Only 60 percent of sidewalk repairs have been completed after 16 years of work. Planned improvements to 28th Street have been postponed. The schedule for routine maintenance of the roadway pavement system with chip/seal and overlays has been lengthened. Transit services have been reduced on the HOP, JUMP and BOUND routes. Eco Pass subsidies have been reduced, and the marketing efforts of GO Boulder have been nearly eliminated.

In recent years, the City Council and Transportation Advisory Board have begun the process of exploring options for new local revenues.

**1998** CU faculty / staff  
Eco Pass is started

**1998** First Circle Boulder by Bicycle  
ride, now called the Boulder 360

**2001** CTN - JUMP,  
LEAP, BOUND-





# Aligning Priorities and Funding



Over the years, the city has reinforced its commitment to building a multimodal system. In 2000, the city took a closer look at whether its investments aligned with policy direction and priorities, asking “does the city’s transportation spending line up with what we said was important?”

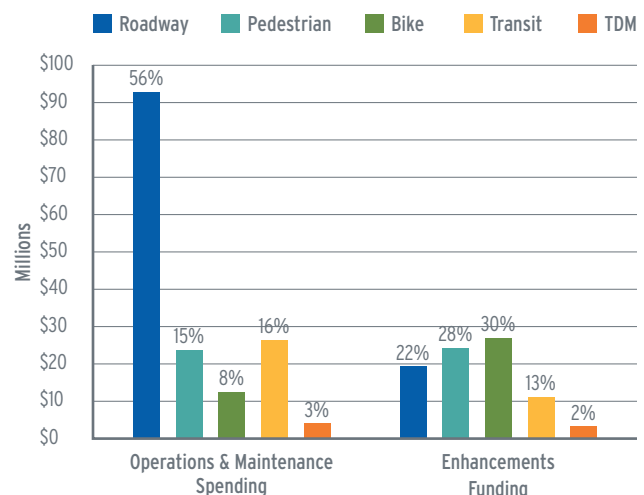
As a result of that analysis, the city redirected \$1 million annually to enhancing the pedestrian, bicycle and transit system, and another \$1 million to maintaining the system. While this amount still did not achieve a preferred level of maintenance, it significantly improved the condition of the multimodal system. One example is the addition of a second snow plowing truck for the bike system which improved bike system clearing to be comparable to that of the road system. And it increased the level of street repair prior to the recent decline in buying power.

Since 2001, the city has tracked expenditures by mode, identifying how maintenance and operations activities and capital improvements benefit the different modes of transportation.

Just under half of total transportation spending has gone to roadways since 2001, with the rest split between bicycle, pedestrian and transit. Of the total, about two-thirds has supported maintenance and operations of the existing system, including subsidies to transit services; while one third has gone to enhancements to the system.

## CITY TRANSPORTATION SPENDING

By Mode, 2001 through 2010 (includes federal funds)



A closer look at the enhancement spending shows that more than three quarters of improvements have been focused on bicycle, pedestrian and transit projects. Roadway improvements account for less than a quarter of spending, with most of those projects adding turn lanes at congested intersections.

**2003** US 36 EIS process begins to identify multi-modal transportation improvements for the corridor

**2003** DASH high frequency service begins in partnership with Louisville



**2004** BOLT service started in partnership with Boulder County and Longmont



# BUSBIKEWALK



## The future: A look into a crystal ball

A look into the crystal ball for the next 20 years of transportation gives few answers but asks many questions.

### ***Did peak oil production occur in 2005 as some assert, or is that date still to come?***

Gas prices are sure to increase, but how fast and how far are unknown. Will new energy sources emerge to take the place of fossil fuels? To date, there is no proven new technology that can sustain current transportation trends, so significant changes may be in store.

### ***Will a rational federal transportation bill emerge to take us forward?***

Unnoticed by many, for the last 20 years this country has been under-investing in its infrastructure. And now, when the needs are growing more obvious, the capacity to make these investments is increasingly limited. Traditional funding sources such as the gas tax are in long-term decline. So far, economic woes and political polarization suggest that the national transportation funding challenge will not be solved soon.

**2004** City and RTD purchase Pollard property for the bus facility to anchor the Boulder Transit Village

**2007** Adoption of Transit Village Area Plan with strong parking and TDM elements

**2004** FasTracks Passes

**2008** Boulder awarded Platinum designation for Bicycle Friendly Communities



### **Will the cost of providing transportation continue to outpace our revenues?**

Over the last 20 years events like Katrina and the massive building in China and India has pushed the price of concrete, asphalt and other materials well beyond most projections.

### **How will the development of communications technology impact transportation?**

Smart phone technology is putting internet access into people's pockets and purses. This instant access to information and increasing use of social networks is already changing how we work and communicate. While virtual interactions continue to grow, so does travel. Seemingly, people still want to be with other people.

### **Will the troubling and costly obesity epidemic worsen, stabilize or improve?**

Will healthcare cost and concerns become significant enough to drive real change in this country's willingness and ability to build communities that makes active living possible for all – from youth to our aging-in-place population?

So far, Boulder's policy direction has stood the test of time. Unlike many communities across the nation, people in Boulder can choose to walk, bike, ride the bus or carpool, whether motivated by the price of gas, concerns about climate change, a desire to improve fitness or simply lifestyle choices.

The crystal ball suggests that the future will exacerbate our local challenges, from the city's ability to expand the multimodal system, to keeping up with basic repair and maintenance of our existing system, and being poised to respond to impacts of peak oil. Will we address our transportation funding dilemma locally, as the nation and state are unlikely to do it? City leadership is wrestling with funding priorities across the organization, and must decide how transportation fits in.

One final question is easy to answer: Will Boulder think creatively about its transportation future? The answer is yes.

The city is already reconsidering how we use the significant public spaces of our transportation system. A "repurposing" of streets could move to the forefront of Boulder's transportation thinking, as the community considers low-cost approaches to converting traditional auto space to make way for other modes and to support vibrant community life in these public spaces. As has been so often the case, the vision, commitment and creativity of the community will be the strongest asset as Boulder moves into the future.



**2009** First Winter bike to work day

**2009** US 36 Final EIS approved



**2010** Broadway Reconstruction Project finished.  
30th Street bike lanes and multimodal improvements underway.

**CITY OF BOULDER'S  
TRANSPORTATION DIVISION**

1739 Broadway  
Boulder, CO 80306  
303-441-3266  
303-441-4271 Fax

**MAILING ADDRESS**

PO Box 791  
Boulder, CO 80306